Smell Free. Sludge Free.
Noise Free. Operator Free.

The solution is in nature itself.

GreenPro

Swachh-a-thon 1.0 — 1st prize winner

* Early decomposition of faecal matter

AQUATRON®

Since 1986

A Non-Mechanical & Non-Electrical Technology for Clean, Safe, & Cost Effective Sewage Treatment.

SAVE

- 35% ↓ Capital Expenditure
- 65% ↓ Power Consumption
- 80% ↓ Operation & Maintenence Cost

Working Principle

What does Aquatron® do?

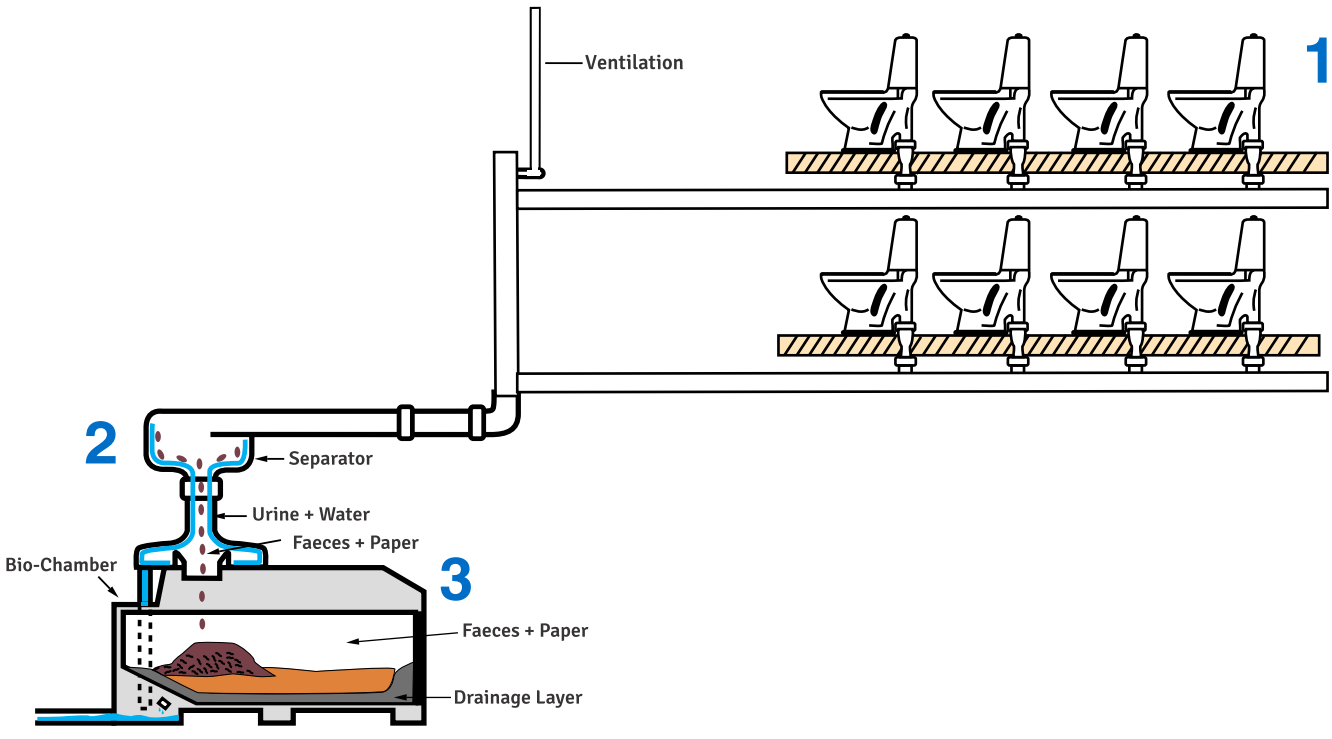
1. Aquatron® prevents the formation of sludge by separating faecal solids from flushing water
2. The separation process is based on three natural principles: Momentum of flushing water, Centrifugal force, and Gravity
3. The process does not involve mechanical moving parts, electricity or chemicals
4. Aquatron® can handle peak loads (up to 60 ltr/second) and infrequent use equally well

What happens to the liquids?

1. 98% of the liquid is separated immediately
2. 2% falls into io-chamber with faecal solids and is filtered out through a special mat
3. Separated flushing water & urine can be mixed with kitchen, bath and washing water
4. Separated liquids are directly reusable for gardening
5. Other reuse and treatment purposes can be achieved with further filtration (see page 4)

What happens to the solids?

1. Faecal matter, paper and any other solid objects fall into the bio-chamber
2. Natural bacteria consume and convert up to 95% of the matter into water vapour & Co2
3. The end product will be a small scoop of hygienic, odorless manure
4. The need to empty the bio-chamber and handle compost is reduced to a minimum
5. There are no insects or unpleasant odours around the dry bio-chamber



Installation

Aquatron® can be placed anywhere within 60 meters (200 feet) from the furthest toilet. Up to 25 toilets can be connected to a single Aquatron®. The system can be scaled up to any capacity by adding more Aquatron® units.

There are only a few simple guidelines for installation and plumbing:

SWR or Type B Socket Fit PVC Pipes
1:100 slope in pipes leading to Aquatron®
1:20 slope in the last 1 meter
No manholes
No 90° bends or Ts
45° degree bends and Ys

A **bio-chamber** is required for collection and odorless decomposition of solids. The bio-chamber can be made in civil, FRP or SS depending on the site.

Recommended design capacity

For residential use: 24 ltr/person
Non-residential use: 6 ltr/person

RDT Campus, Dornala
Civil bio-chamber

Grape County Resort, Nashik
SS bio-chamber, wagon type

Metropolis Gurukrupa Apartments, Bangalore
FRP bio-chamber in stilt

Sandhya Elite IT tower, Hyderabad
Bio-chambers in basement dead spaces

Aquatron STP vs. Conventional

How does an Aquatron®-based STP differ from a conventional one?

	Conventional STP	Aquatron® based STP
Sludge Processing	Conventional STPs generate sludge. Sludge pumps, filter presses etc. are required for handling it. Sludge processing and re-circulation requires power, e.g. in a 50 KLD STP this could be about 60 units per day.	Aquatron®-based STPs don't generate sludge. Instead, there is a dry bio-chamber for natural composting of separated faecal matter, toilet paper etc. Solid separation and composting don't require any power and thus 100% of the power required at this stage in conventional STPs is saved.
Operator's Salaries	Most conventional STPs need two or more skilled operators.	Aquatron®-based STPs can be automated and only require a basic in-house maintenance person to monitor the system once a day. 100% of operator salaries can be saved.
Power Consumption		Due to no sludge processing and reduced need for aeration: 50-75% less than conventional STPs in non-residential installations. 30% less than conventional STPs in residential installations.
Difference in repairs & maintenance	Sludge pumps and filter presses require repairs and maintenance. MBBR media and MBR membranes need to be replaced every 5-8 years.	There are no mechanical moving parts in Aquatron®. Thus it does not require any repairs. The life span of Aquatron is 50+ years. Filter feed pump maintenance and MGF/ACF filter media replacements are the same as in conventional STPs.
Smell	Septic smell prevalent.	Odor free Operation

Technical Specs

Material: Recyclable polyethylene and glass-reinforced polyester
Size: Approx. 600 mm x 500 mm x 500 mm
Inlet diameter: 110 mm / Outlet diameter: 110 mm

Lifespan: At least 50 years

Technical Specs / O & M

Compared to conventional STPs

Aquatron® STPs achieve the same end result with less

HUMAN COST

90% LESSER

SPACE CONSUMPTION

60% LESSER

POWER CONSUMPTION

65% LESSER

Decomposed material in the Bio-Chamber

Operation & Maintenance

Operating and maintaining Aquatron® is very simple and no specialist operator is needed. In most cases, the remaining STP can also be automated in order to save on operator costs.

Note: Maintenance of remaining equipment like pumps, filters, & aerators are as per manufacturer guidelines.

Load Management - No minimum or maximum load requirements to run the STP, ensuring perfect operation even under 100% shock loads.

Carbon Savings- A minimum of 65% reduction in carbon emissions due to substantial electricity savings.

Site: Metropolis Gurukrupa, Bengaluru

Bottle 1: Raw Water

Bottle 2: DMF Treated Water

Bottle 3: Micron Treated Water

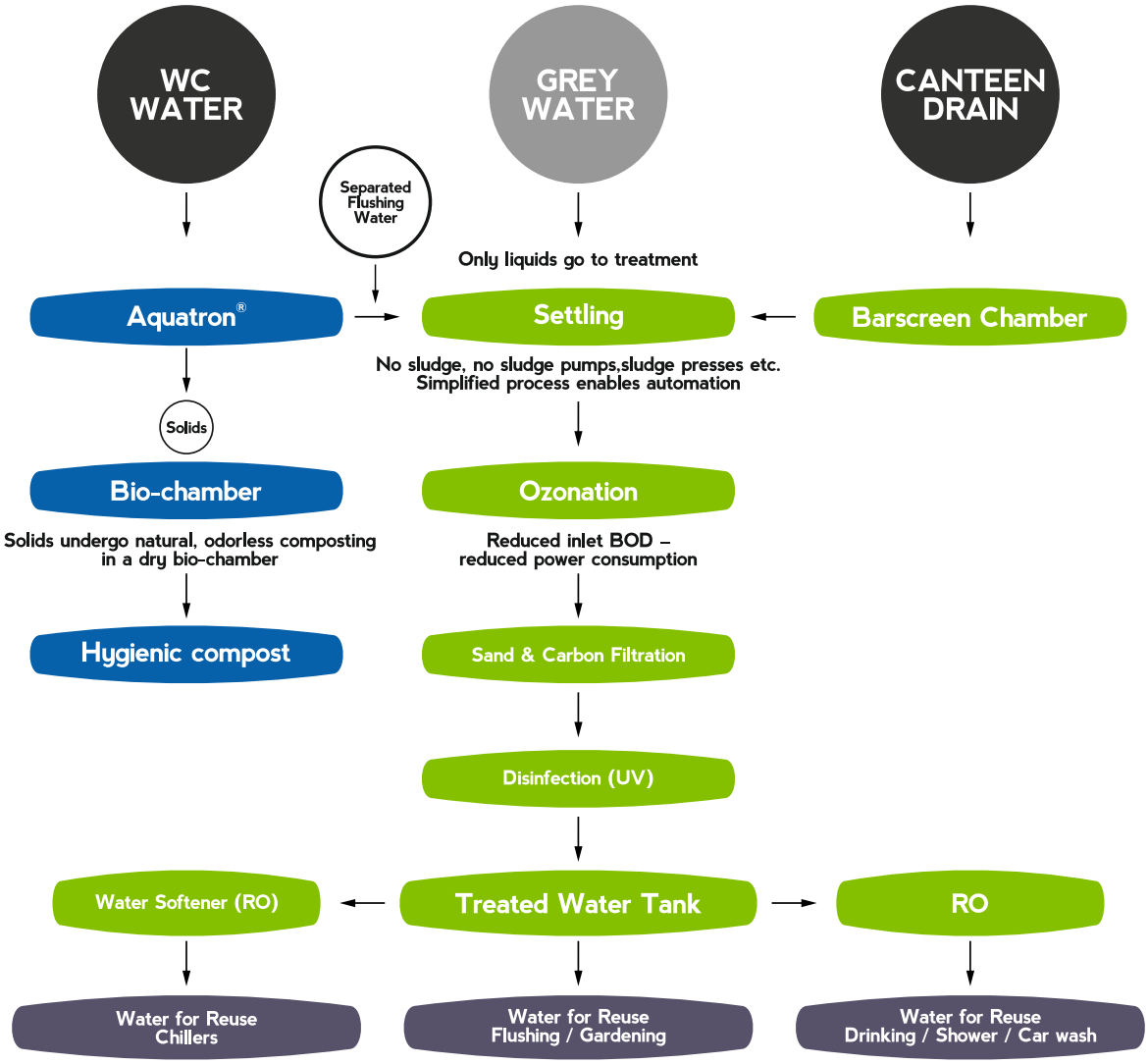
Bottle 1: Raw Water

Bottle 2: DMF Treated Water

Site: Voora Ocean's 27, Chennai

Water Quality

The Aquatron® Process



Typical stages of water quality in an Aquatron®-based STP

Source : WeWork BlueOne Square, Gurgaon - 50KLD STP with Aquatron® retrofit installation

Parameters	Unit	Black water after solid separation by Aquatron®	Grey water only	Separated water and grey water combined	Treated water	Meets NGT and CPCB Limits
BOD 3 days	mg/ltr	20-40	102	77	**7.3**	✓
COD	mg/ltr	60	241	198	**24**	✓
pH	-	N/A	6.5	7.86	**7.85**	✓
TSS	mg/ltr	47	72	97	**5.2**	✓
Ammonical Nitrogen	mg/ltr	64	15.2	14	**0.67**	✓
Oil and grease	mg/ltr	0	12	6.1	**0.2**	✓
Coliforms	CFU/100 ml	7400	9600	9100	**5**	✓
E.Coli	CFU/100 ml	N/A	156	128	**Absent**	✓

Site Installation / Pics

WeWork BlueOne Square, Gurgaon

Indian Army, Ladakh
Entrance to frost-proof bio-chamber bunker

Sacred Grove Ashram, Madanapalle
Pipes from multiple buildings connected to one Aquatron

Installation in Hyderabad, India

iClean, Hyderabad

Wadala Eye Hospital, Mumbai

AQUATRON®

Since 1986

- 200 plus installations across India
- 12,000 plus installations worldwide

+ Aquatron® – Ecological toilet system using ordinary water closets

+ Patented technology owned by Swedish firm Aquatron InternationalAB

+ More than 38 years worldwide experience in wastewater separation without electricity

Aquatron® at a glance

- Separates faecal matter from flushing water
- Separation based on natural principles
- Natural bacteria convert separated faecal solids into non-hazardous gas and hygienic soil
- Treatment and immediate reuse of separated liquids becomes easy
- Minimal O&M costs
- Applicable from a single user to 1000s of users
- Existing applications include individual houses, hospitals, factories, schools, educational institutions, IT complexes, pharma companies, villa layouts and many more
- 50 years lifespan

Aquatron® Clients

Abbott
भारतीय सेना
organo life.on.a.slow.track.
ONGC
SUN PHARMA
CCPL INTEGRATING VALUES
wework
HIND TERMINALS
SAS INFRA WE BUILD TRUST
ModiSpaces Four Generations For Generations
HIRA GODAWARI POWER & ISPAT
VOORA
The Satsang Foundation
indis
SURAKSHA SMART CITY
iCLEAN
Takasago Thermal Engineering
KL (DEEMED TO BE UNIVERSITY)
CollectiveProject
ADMERUS

Authorised Channel Partner

Plato Green Tech
Evolving Green Thought

Plato Green Tech Private Limited
Sy. No: 236, Girmapur, Medchal, Hyderabad 501401 Telangana

Phone: +91 79950 57851 / +91 89775 40825
E-mail: commercial@aquatron.co.in